

Compost Crops

Prerequisite: This activity involves the use of previously made compost. Your students can use the compost they made from completing one of the following activities: Compost Chefs or Worms at Work.



Objective

To teach students how composting can prevent food scraps and yard trimmings from being thrown away and to show them the usefulness of compost in gardening.



Activity Description

Students will assess the effectiveness of compost as a soil amendment by planting and comparing two garden plots—one that relies just on dirt and one that relies on their homemade compost.



Materials Needed

- *Compost* (See prerequisite above)
- Two 4- by 4-foot garden plots in the schoolyard
- Two packets of flower seeds (have your students vote on the type and color)
- Two seed packets of a vegetable that grows well in your locale
- One watering can
- Two garden trowels
- One copy of the *Compost Crop* worksheet per student
- One tape measure or ruler



Key Vocabulary Words

Decompose
Compost
Root
Nutrient



Duration

Setup: 1 hour
Follow-up each week:
15 minutes



Skills Used

Computation
Observation/classification
Motor skills



Activity

Step 1: Locate and mark the two schoolyard garden plots you plan to use, making sure they receive plenty of direct sunlight. Secure permission for gardening from the proper school authorities.

Step 2: Discuss composting with the students and explain the following concepts (refer to the Teacher Fact Sheet titled *Composting* on page 109 for background information):

- Recap how the students made the compost and what materials they used.

- Discuss how this compost can now be used in a garden.
- Explain why compost can be more effective than just natural soil.

Step 3: Take the class outside to the garden plots and divide the students into two groups. Explain how the composting experiment will work. Tell one group that they will only add water to the soil to help their plants grow. Give the other group a bucket of compost and tell them to use the trowels to mix it into their soil before watering it.



science



math



Journal Activity

Ask students to pretend they are world-famous gardeners giving an interview about the secrets of their success. How do they make their plants grow so well?

Step 4: Have each group plant flower seeds and vegetable seeds according to packet instructions in their respective plots.

Step 5: Ask the students to predict which plot will grow better and faster. Have them record their predictions and reasoning on their *Compost Crop* worksheets.

Step 6: Break each of the two groups into pairs of students and assign each pair a week during which they are gardeners. During that week, those students are responsible for visiting their group's plot each day. They should water it and use the tape measure or ruler to record any changes in plant growth on their *Compost Crop* worksheets. Create a gardener calendar for the classroom to remind students when it's their turn to watch over the plots.

Step 7: After 4 or 5 weeks, have the entire class visit the garden plots again. Discuss which plot's plants grew faster. Ask student volunteers to gently dig up one plant from each plot. Have the students examine and compare the root structures of each plant. Have several students dig around in the plots' soil, discuss the differences in texture or moisture they find, and have them notice how many earthworms or bugs they find.

Step 8: If the vegetables in the plot are ripe, pick them and have a class snack from the compost harvest.



Assessment

1. Have students list the benefits of composting, both from the standpoint of preventing waste and as a garden soil supplement.



Enrichment

1. Use the two garden plots as a lead-in to a more in-depth science lesson on soil and compost. Compare the relative amounts of materials in different soil samples. Have student volunteers collect a handful of soil from each plot. For each sample, fill a liter (or quart) jar about one-quarter full of soil, then add water to about the three-quarter level. Screw the lid on tightly and shake hard for about a minute. Let the jars stand for several minutes. The mixture will separate into layers, with the largest particles (gravel and sand) settling on the bottom, and finer particles (clay and silt) settling above. Organic matter—leaves, twigs, and any animal matter—will float on top of the water. Discuss the differences between the soil and compost/soil plot samples. Explore the components of your local soil and compost.
2. Have the students compile their measurements and recordings from their *Compost Crop* worksheets on the board. Depending on the age group, ask all of the students to make graphs charting the growth in each plot. Ask them why plants in the compost plot grew more quickly.
3. Discuss the root structures of the plants from the different plots. Ask students if the plant from the compost plot was more developed in its root structure? Why?
4. Ask the students to think about the differences in the soil of the two plots. Did they see more earthworms in the compost plot? Why? Why would these creatures be attracted by the compost? How did the presence of earthworms affect the growth of the plants?
5. Start a schoolwide compost bin using the appropriate wastes from school lunches. Have students decide which wastes can be added to the compost pile and have different classes watch over and stir the pile each week. Have each participating class start a small flower garden plot, using the compost as a soil amendment.



Name: _____

Plot #	Amount of Water Added	Soil Status (How It Looks and Smells)	Presence of Plant Growth? Which Plants?	Measurement of Plant Growth (mm)	Thoughts or Observations
Day 1					
Plot #1 (just soil)					
Plot #2 (compost and soil)					
Day 2					
Plot #1 (just soil)					
Plot #2 (compost and soil)					
Day 3					
Plot #1 (just soil)					
Plot #2 (compost and soil)					
Day 4					
Plot #1 (just soil)					
Plot #2 (compost and soil)					
Day 5					
Plot #1 (just soil)					
Plot #2 (compost and soil)					